

## **Scandinavian earthworms- a checklist of species**

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### **Introduction**

A total of 41 Scandinavian earthworm species in 4 families are recorded here. Previous regional reports tended to list only about 20 taxa in Lumbricidae only. Those from Norway were described by Stöp-Bowitz (1969) especially his Table IV "Species of Lumbricidae found in Scandinavia and adjacent territories and in North America" (p.260). Finland earthworm were catalogued by Karppinen & Nurminen (1964), and Terhivuo (1988; 1989). Swedish worms were described by Julin (1949); Sweden also has a SWORM project database of some 20 earthworm species [<http://www2.nrm.se/ev/dok/oligochl.html.en> or <http://www.nrm.se/researchandcollections/zoology/invertebratezoology/research/researchprojects/lenagustavsson/checklistofoligochaeta.4.5fdc727f10d795b1c6e800022016.html> Jan. '07]. Danish taxa (fifteen Lumbricidae species in 8 genera) are described by Clausen (1987; 1993) and about 20 Lumbricidae plus a note about Megascoledia and Eudrilidae in hot-houses are listed on Lars Skipper's website [[http://hjem.get2net.dk/lars\\_skipper/regnorme3.htm](http://hjem.get2net.dk/lars_skipper/regnorme3.htm) that is supported with details from Skov-og Naturstyrelsen database on introduced taxa [www.skovognatur.dk/natur/invasive\\_arter/images/introarter.xls](http://www.skovognatur.dk/natur/invasive_arter/images/introarter.xls) Jan., 2007].

A few other North Eastern Atlantic Taxa (NEAT) are listed in Hansson (1998) [[http://www.tmbi.gu.se/libdb/taxon/neat\\_pdf/NEAT\\*Annelida.pdf](http://www.tmbi.gu.se/libdb/taxon/neat_pdf/NEAT*Annelida.pdf)].

Other sources are as listed in the references and the cosmopolitan exotics, actually all those found in Scandinavia, are fully described in Blakemore (2002; 2006 and in press).

### **Results - Checklist of Scandinavian species**

Family LUMBRICIDAE (Holarctic)

1. *Allolobophora chlorotica* (Savigny, 1826) [syn. *Al. virescens* (Savigny, 1826) that Sims & Gerard (1985; 1999: 52) note may yet be available for the pink, impigmented forms]. From Norway, southern Sweden, common in Denmark, and southwestern Finland.
2. *Allolobophora cupulifera* Téry, 1943. From Sweden and Denmark (listed by Lars Skipper) and from Zealand in Denmark (Linde & Holter, 2002).

3. *Allolobophoridella eiseni* (Levisen, 1884). From Sweden (Skåne - Scania, Sweden's southernmost province on NEAT/SWORM websites as *Lumbricus* or *Bimastos eiseni*) and from Denmark (listed as *Eisenia eiseni* by Lars Skipper).
4. *Aporrectodea caliginosa* (Savigny, 1826) [many synonyms including *Aporrectodea turgida* (Eisen, 1873) although *trazezoides* and *tuberculata* are now given separate status; whereas the *nocturna* morph, which has been rarely recorded outside the UK e.g. a few records from Germany and France, is stated by Gerard (1964: 3) to be similar to both *tuberculata* and to *A. longa*; Sims & Gerard (1999: 56) suggest that ecologists record the non-taxonomic "nocturna" morph separately in their experimental results]. From Norway, Sweden northwards to southern Lappland, in Finland, and Denmark.
5. *Aporrectodea tuberculata* (Eisen, 1874). Gates (1972) its the distribution as Scandinavia, Western Europe, etc.; possibly a synonym of *A. caliginosa*.
6. *Aporrectodea icterica* (Savigny, 1826). Introduced to greenhouses in Denmark (NEAT/Lars Skipper/ <http://www.skovognatur.dk/>).
7. *Aporrectodea limicola* (Michaelsen, 1890). From Sweden (NEAT/SWORM).
8. *Aporrectodea longa* (Ude, 1885). From Norway (Stavanger), Sweden, Denmark, and few records from southern Finland.
9. *Aporrectodea rosea rosea* (Savigny, 1826) [many synonyms]. From Norway (typical form only), Sweden, southern Finland, and common in Denmark.
10. *Dendrobaena attemsi* Michaelsen, 1902. From Shores of Savean, Sweden (NEAT/SWORM website) and a report from National Park near Stockholm ([http://www.nrm.se/ev/download/clitellata\\_stock.pdf](http://www.nrm.se/ev/download/clitellata_stock.pdf)), see also Rota, E. & Erséus, C. (1997); listed as introduced worm to Denmark (misspelt "*Dendrobaena attemis*" <http://www.skovognatur.dk/>).
11. *Dendrobaena hortensis* (Michaelsen, 1890) [several synonyms, especially by Friend]. From Norway and Uppland, Sweden also found in compost heaps in Botanic Garden Copenhagen, Denmark (Lars Skipper /<http://www.skovognatur.dk/>).
12. *Dendrobaena octaedra octaedra* (Savigny, 1826) [several synonyms; from Britain and Ireland; Sims & Gerard (1999: 70) mistake the spermathecal pores in 9/10-11/12 as "three pairs in 9/10/11"]. Common throughout Norway, Sweden, Denmark and Finland.
13. *Dendrobaena veneta veneta* (Rosa, 1886) [cosmopolitan, several synonyms]. Listed as composting worm introduced to Denmark (misspelt "*Eisenia veneta*" <http://www.skovognatur.dk/>).

14. *Dendrodrilus rubidus norvegicus* (Eisen, 1874) [possibly a morph rather than subspecies]. From Norway and less frequently from northern Sweden and questionably from Finland (Stop-Bowitz, 1969).
15. *Dendrodrilus rubidus rubidus* (Savigny, 1826) [many synonyms]. From Norway, Sweden, Finland and Denmark.
16. *Dendrodrilus rubidus subrubicundus* (Eisen, 1874) [possibly a morph rather than subspecies]. From Norway, Sweden, Finland and Denmark.
17. *Dendrodrilus rubidus tenuis* (Savigny, 1826) [possibly a morph rather than subspecies]. From Norway, Sweden, Finland and Denmark.
18. *Eisenia fetida andrei* Bouché, 1972 nom. nov. pro *E. fetida* var. *unicolor* André, 1963). [Note: *E. fetida andrei*, placed in synonymy by Easton (1983) and Csuzdi & Zicsi (2003: 143) is sometimes given separate specific status, but this is almost arbitrary, see Blakemore (2002)]. Reported from Norway on NEAT website; Sweden and Finland listed on ZipcodeZoo ([http://zipcodezoo.com/animals/e/eisenia\\_andrei.asp](http://zipcodezoo.com/animals/e/eisenia_andrei.asp) Jan., 2007) and introduced as a composting worm to Denmark (<http://www.skovognatur.dk/>).
19. *Eisenia fetida fetida* (Savigny, 1826) [many synonyms, see Blakemore (2002); including *fasciata* Backlund, 1948 still claimed as valid by Stop-Bowitz (1969) and NEAT website]. From Norway, Sweden, Denmark and Finland.
20. *Eisenia nordenskioldi* (Eisen, 1879) [?syns. *acystis* Michaelsen, 1902; *pallida* Malevics, 1956]. From northern Korea and Siberia to Chukotka and Sakhalin Island (e.g. Perel, 1979: 78), possibly as far south as Crimea and possibly as far west as Sweden (Michalsen, 1900: 476), a range overlapped by *E. fetida*, although the extent of naturally acquired distributions are difficult to determine (e.g. also reported from Hawaii but, perhaps like the Azores report, this is a mistake!).
21. *Eiseniella tetraedra cerni* Blakemore, 2004: 78 [nom. nov. pro *Eiseniella tetraedra* mut. *intermedia* Cernovitov, 1934: 17 non *Eiseniella intermedius* Jackson, 1931: 123 (sic) (= *Eiseniella tetraedra tetraedra*)]. From Norway and Denmark (as *Ei. tetraedra intermedia*) by Stop-Bowitz (1969).
22. *Eiseniella tetraedra pupa* (Eisen, 1874) (syns. *hercynius* Michaelsen, 1890; *tetraedra quadripora* Cernovitov, 1942). [Either in synonymy of *Ei. tetraedra* by Csuzdi & Zicsi (2003: 153), or (Csuzdi & Zicsi, 2003: 154, 157) maintained with separate subspecific status as *E. tetraedra hercynia*; these authors also say that the only differences of several *tetraedra* morphs are the locations of the male pores, thus possibly just varieties rather than

- (sub)species]. From Sweden (reported as *Ei. hercynia*).
23. *Eiseniella tetraedra tetraedra* (Savigny, 1826) [several synonyms including *Allurus tetragonurus* Friend, 1892, *Allurus macrurus* Friend, 1893; *Ei. tetraedra pupa* (Eisen, 1874) with syn. *hercynius* Michaelsen, 1890; *tetraedra quadripora* Cernovitov, 1942; - as the only differences of several *tetraedra* morphs are the locations of the male pores, Csuzdi & Zicsi (2003: 153) argue they could be varieties rather than subspecies]. Particularly widespread species from Norway, Sweden, Finland, Denmark.
  24. *Helodrilus oculatus* Hoffmeister, 1845. From Denmark (Lars Skipper and Brands, 2007: [http://zipcodezoo.com/Animals/H/Helodrilus\\_oculatus.asp](http://zipcodezoo.com/Animals/H/Helodrilus_oculatus.asp)).
  25. *Lumbricus castaneus* (Savigny, 1826). From Norway, Sweden, Finland, Denmark.
  26. *Lumbricus festivus* (Savigny, 1826). From Norway, Sweden, Denmark but not yet known from Finland.
  27. *Lumbricus rubellus rubellus* Hoffmeister, 1843 [many synonyms]. From Norway, Sweden, Denmark and Finland.
  28. *Lumbricus terrestris* Linnaeus, 1758. From Norway, Sweden (type locality), Finland, Denmark.
  29. *Lumbricus meliboeus* Rosa, 1884 (syn. *michaelseni* Ribaucourt, 1896). From Sarek, W. Norway on NEAT website; and listed with a “?” on SWORM website (from Sweden) also thought transported (by humans?) to Swedish Lapland.
  30. *Octolasion cyaneum* (Savigny, 1826) [non *communis cyaneus* Hoffmeister, 1845 (= *Aporrectodea caliginosa*); syn. *stagnalis* Hoffmeister, 1845; *alyattes* Kinberg, 1867; *studiosa* Michaelsen, 1890; *kempi* Stephenson, 1922; *cyaneum* var. *armoricum* Bouché, 1972 - this synonymy by Csuzdi & Zicsi (2003: 193), thus the nominal subspecies elevated to specific status]. From Norway, Sweden, Denmark and a single southern Finland location.
  31. *Octolasion tyrtaeum lacteum* (Örley, 1881) [syns. Gates (1972: 128) noted that *tyrtaea* may be a synonym of *cyaneum* and further that Cernovitov (1931) had previously recognized Savigny's *tyrtaeum* was the same as Örley's *lactaeum* although Csuzdi & Zicsi (2003: 198, 224) (erroneously?) have *Enterion tyrtaeum* as a *species incertae sedis*, place *gracile* in synonymy of *lacteum*, and appear to overlook *Allolobophora tyrtaea*]. From Norway, Sweden, Denmark and Finland.
  32. *Satchellius mammalis* (Savigny, 1826). From Norway (on NEAT website) and introduced to parks near Copenhagen, Denmark (listed by Lars Skipper/

<http://www.skovognatur.dk/>).

#### Family OCNERODRILIDAE

1. *Ocnerodrilus occidentalis* Eisen, 1878. Reported from Denmark by Gates (1972: 274) who said that he included Denmark, Greece, Lebanon, Japan and possibly Germany, due to interceptions by Gates (1964).

#### Family OCTOCHAETIDAE

1. *Dichogaster (Diplothecodrilus) bolawi* (Michaelsen, 1891) [several syns. including *Dichogaster lageniformis* Friend, 1916: 265 from Botanic Gardens, Oxford]. Swedish record from SWORM, and sewage systems in Stockholm and Finland.
2. *Dichogaster (Diplothecodrilus) saliens* (Beddard 1893) [originally *Microdrilus saliens* Beddard, 1893: 683 et *M. asiaticus* (laps.) Beddard, 1893: 706.] Swedish record from SWORM.

#### Family MEGASCOLECIDAE

1. *Amyntas gracilis* - listed as introduced to Denmark (<http://www.skovognatur.dk/>).
2. *Amyntas rodericensis* - listed as introduced to Denmark (<http://www.skovognatur.dk/>).
3. *Metaphire californica* - listed as introduced to Denmark (<http://www.skovognatur.dk/>).
4. *Perionyx excavatus* - listed as composting worm introduced to Denmark (<http://www.skovognatur.dk/>).
5. *Pithemera bicincta* - listed from glasshouse introduced to Denmark (<http://www.skovognatur.dk/>).

#### Family EUDRILIDAE

1. *Eudrilus eugeniae* - listed as composting worm introduced to Denmark (<http://www.skovognatur.dk/>).

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[End of Scandinavian Checklist].